

## ABSTRACT OF THE DISCLOSURE

An apparatus and method is provided for stabilizing CT number calculations by a CT system against fluctuations in the x-ray source voltage due to voltage source drift. A voltage reference level is established, by adjusting the voltage to the value which yields the correct CT number for a sample having a known CT number value. The x-ray energy spectrum measured by a kV meter is used to maintain the voltage constant at this reference level. The kV meter has a principal detector that generates a first intensity magnitude of the x-rays, and an auxiliary detector that generates a second intensity magnitude. The auxiliary detector includes an absorber that preferentially absorbs x-ray photons having a relatively low energy. A feedback controller provides to the voltage source a voltage control signal, which is continuously adjusted as a function of the first and second intensity magnitudes, so as to maintain the voltage constant at the reference level.